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Parenthood and Happiness: Effects of Work-Family Reconciliation Policies in 22 OECD Countries

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Abstract

The recent proliferation of studies examining cross-national variation in the association between parenthood and happiness reveal accumulating evidence of lower levels of happiness among parents than nonparents in most advanced industrialized societies. Conceptualizing parenting as a stressor buffered by institutional support, we hypothesize that parental status differences in happiness are smaller in countries providing more resources and support to families. Our analyses of the European Social Surveys (ESS) and International Social Survey Programme (ISSP) reveal considerable variation in the parenthood gap in happiness across countries, with the U.S. showing the largest disadvantage of parenthood. We also find that more generous family policies, particularly paid time off and childcare subsidies, are associated with smaller disparities in happiness between parents and non-parents. Moreover, the policies that augment parental happiness do not reduce the happiness of nonparents. Our results shed light on macro-level causes of emotional processes, with important implications for public policy.

Introduction

The lower level of emotional well-being found among parents compared to nonparents in the majority of empirical studies across industrialized societies has recently captured the attention of social scientists, policy analysts, the media, and the public (Kohler, Behrman and Skytthe 2005; Margolis and Myrskylä 2011; Senior 2014; Simon 2008; Umberson, Pudrovska and Reczek 2010). This pattern first emerged in the 1970's – a period marked by significant social and economic changes including the decline in men's earnings, the increase in women's employment, and the rise of both dual-earner and single parent families (Kohler, Billari and Ortega 2006; McLanahan and Adams 1989). This finding not only contradicts

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widespread beliefs that parenthood is pivotal for the development and maintenance of happiness in adulthood (Hansen 2012; Margolis and Myrskylä 2011), but is an anomaly in decades of research documenting the benefits of social roles and relationships for mental health (Durkheim 1897; House, Landis and Umberson 1988). Based on theories of stress and mental health, several scholars have concluded that the emotional rewards of having children are outweighed by the emotional and financial costs associated with contemporary parenthood (Balbo, Billari and Mills 2012; Begall and Mills 2011; Evenson and Simon 2005; Liefbroer 2005; McLanahan and Adams 1989; Nomaguchi and Milkie 2003; Woo and Raley 2005).

Despite the recent proliferation of cross-national research investigating variation in parental happiness (Kahneman et al. 2010; Ono and Lee 2013; Savolainen et al. 2001), we still do not know *why* some nations have larger disparities in happiness between parents and non-parents than others and the possible contextual, institutional determinants of them. What we do know is that there are varying welfare state regimes throughout the developed world that provide resources and social support to parents (Esping-Anderson 1990; Kahneman et al. 2010; Savolainen et al. 2001). These supports range from the extensive provision of childcare and workplace accommodations in the Scandinavian states to the minimal supports provided in the U.S. and some Mediterranean countries where parents cope with the time, energy, and financial demands of parenthood with their own resources and social networks (Glass 2000; Gornick and Meyers 2003; Simon 2008). In these low support contexts, parenthood is particularly stressful and emotionally taxing (Kahneman et al. 2010).

In this paper, we harmonize data from the 2006 and 2008 European Social Survey (ESS) as well as the 2007 and 2008 International Social Survey Programme (ISSP) to investigate cross-national variation in the parenthood gap in happiness – a frequently used global measure of emotional well-being – across 22 Organization for Economic Cooperation and Development (OECD) countries. Our goal is to assess the degree to which variation in specific state-provided family policies helps explain cross-national variation in the parenthood gap in emotional well-being. Drawing on theories about stress and mental health (Pearlin 1989) as well as research on the effects of public policies on the experience of parenting (Kahneman et al. 2010; Margolis and Myrskylä 2011; Savolainen et al. 2001), we hypothesize that the larger policy context helps explain why adults residing with children report less happiness than persons not living with children; we expect that parental status disparities in happiness are smaller in countries with more generous family policies than in countries that provide minimal public assistance to parents. Finally, we test whether public policies matter more for mothers' than fathers' happiness, given women's greater responsibility for childcare in virtually all OECD countries.

Our research improves upon prior cross-national studies of parenthood and happiness by: (1) examining the role of *specific* public policies and policy packages rather than relying on general welfare state typologies to explain variation in the gap in happiness between parents and non-parents across nations, (2) including a broad range of English-speaking countries along with European nations to incorporate market-based provision of care and tax support systems into the analysis of policies, (3) using multiple country observations across adjacent years to maximize the reliability of country measures, and (4) focusing on the main effects

of policies on the general population as well as on parents as a population subgroup within countries (Ono and Lee 2013) to test whether policies that support parents have negative effects on non-parents. While we focus on the relative gap in happiness between contemporary parents and non-parents across OECD societies, our paper is animated by a topic that has long preoccupied sociologists – the link between a society's institutional arrangements and its citizens' well-being (Mills 1959).

Background

Parental Status Differences in Emotional Well-Being

Abundant research shows a significant negative association between parenthood and emotional well-being in developed countries (Gilbert, 2007; Hansen 2012; Kahneman et al. 2004; McLanahan and Adams 1989; Nomaguchi and Milke 2003; Stanca 2012; Umberson, Pudrovska and Reczek 2010). This association varies in size depending on the personal and household characteristics of parents (Aassve et al. 2012; Umberson et al. 2010; Woo and Raley 2005), but is evident in all types of households, among both mothers and fathers, and across several dimensions of emotional well-being – including symptoms of generalized distress, depression, and anxiety as well as life satisfaction and the frequency of everyday negative and positive emotions such as anger and happiness (Hansen 2012; Ross and Van Willigen 1996; see Umberson et al. 2010 and Nelson, Kushlev, and Lyubomirsky 2014 for recent reviews).

Most of this research is based on comparisons between non-parents and parents residing with dependent children – a period in life when the time, energy, and financial demands of parenthood are greatest. While married and cohabiting parents are less distressed than single parents (Aassve et al. 2012; McLanahan 1983; Simon 1998; Woo and Raley 2005), studies repeatedly show that across marital statuses, parents residing with minor children report lower levels of well-being than adults not residing with children – a group that sometimes includes childless adults as well as noncustodial and empty-nest parents (Evenson and Simon 2005).

Moreover, a growing body of work indicates that empty-nest parents do not enjoy greater emotional well-being than childless adults (Milke, Bierman, and Schieman 2008; Koropecj-Cox 2002; Pudrovska 2008). This finding sharply contrasts with the assumption that the emotional benefits of parenthood are greatest once children are grown and independent. In fact, Evenson and Simon (2005) find that there is no type of parent (custodial, non-custodial, step-parents of both minor and adult children) reporting significantly better mental health than nonparents in the U.S.

These findings represent an anomaly in research on the impact of social embeddedness on mental health; since the time of Durkheim's (1897) classic study of suicide, research repeatedly finds that marriage and employment improve emotional well-being (House et al. 1988; Mirowsky and Ross 2003). The lower level of emotional well-being reported by parents than non-parents is a timely and pressing policy issue, possibly fueling record levels of childlessness throughout the developed world (Aassve et al. 2005; Gornick and Myers, 2003; Mather 2012), as well as contributing to individuals having fewer children than they

originally intended (Musick, England, Edgington, and Kangas 2009). The rise in *voluntary* childlessness in developed countries suggests many adults now view parenthood as unnecessary for a fulfilling life, especially if they lack the necessary resources (spouse or partner, income, residence) that facilitate raising children to adulthood (Friedman 2013; Koropeczy-Cox & Pendell 2007; Thornton & DeMarco 2001). The decrease in family size among those having children suggests that the early experiences of parenthood in many countries convince parents that their social, economic and emotional well-being is improved by reducing their fertility intentions (Margolis and Myrskylä 2015).

Why is Parenthood Associated with Lower Levels of Emotional Well-Being?

The dominant explanation of the parenthood gap in emotional well-being comes from theories of stress and mental health (Pearlin 1989), and argues that children increase adults' exposure to a variety of stressors. Stress exposure, in turn, increases symptoms of distress, depression, and anxiety as well as negative emotions such as anger, while decreasing positive feelings such as happiness. Like other major adult social roles, parenthood provides individuals with personal gratification, an important identity, meaning, and social connections to others (Nomaguchi and Milke 2003; Umberson and Gove 1989) – which improve mental health. At the same time, the emotional rewards of having children could be overshadowed by the stress of parenthood.

To date, researchers have identified a number of stressors parents routinely confront that undermine their emotional well-being. Parents residing with minor children experience time and energy demands often coupled with sleep deprivation (Avison et al. 2007; Nelson et al. 2014), work-family conflict (Begall and Mills 2011; Nomaguchi, Milkie, and Bianchi 2005), difficulties obtaining high quality, affordable childcare (Kravdal 1996; Ross and Mirowsky 1988), and financial strain (McCrate 2005; Nelson et al. 2014; Warren and Tyagi 2003). Not surprisingly, these stressors are greater among single than married and cohabiting parents (Aassve, Goisis, and Sironi 2012; Simon 1998; McLanahan 1983) and help explain why they report the lowest levels of emotional well-being of all parents. Disadvantaged parents are exposed to additional sources of parental stress, including the stress of living in unsafe neighborhoods with under-resourced schools as well as insufficient food and inadequate child and healthcare for their offspring (Edin and Kefalas 2005; Heymann 2000). Parents of older children are exposed to stressors such as the financing of their young adult children's higher education and independent living while they are facing their own retirement (Fingerman et al. 2012; Furstenberg et al. 2004; Warren and Tyagi 2005). However, while scholars have provided insight into the stressors that mediate the association between parenthood and emotional well-being, they have focused on the *proximate* and ignored the *distal* sources of these stressors. Distal sources of stress, rooted in the larger policy context in which adults parent, may shed light on why the emotional effects of parenthood vary across societies. All of the proximate stressors noted above (finding high-quality affordable child care, having adequate health care, food, and safe neighborhoods, financing higher education, etc.) are amenable to public policy solutions that countries can choose to implement or choose to ignore. We investigate which specific policy solutions across countries ameliorate the parental stressors that impede self-reported happiness.

The Larger Policy Context of Parenting in Developed Nations

While most economically developed nations have experienced similar social and economic changes since the 1970's – including the increase in women's employment, dual-earner and single-parent households, the decline of men's wages, and the increasing importance of higher education for future earnings – the extent to which these changes have been met with supportive public policies varies widely across countries. The U.S. is exceptional in its failure to develop policies that help offset the financial and opportunity costs¹ associated with raising children, making parenthood unusually expensive in the U.S. Moreover, the costs of children in the U.S. are increasingly born by mothers, with recent estimates showing four in 10 households with children are supported solely or primarily by mothers' earnings (Wang, Parker and Taylor 2013). But unlike its economically developed counterparts, the U.S. has done little to offset the costs of raising children and ameliorate the incompatibility between employment and child care² – the 1993 Family and Medical Leave Act being the sole federal policy to assist employed parents.³

Ironically, because most workplace accommodations in the U.S. are employer-provided and market-driven, they tend to be available to workers with more market power rather than the employed parents most in need of assistance (Kelly and Kalev 2006). Research indicates that employer provided family leave, work-time flexibility, and childcare assistance in the U.S. are significantly more available to men, managerial and professional workers, and workers in large firms (McCrate 2002; Noonan and Glass 2012; Osterman 1995). Young, poorly educated, female, and single parents most in need of workplace resources and supports are least likely to receive them (Deitch and Huffman 2001; Lambert 2009; McCrate 2005).

Across the EU and other English-speaking industrialized countries (e.g. Canada, Australia), by contrast, a substantial number of public policies reduce both the direct financial costs and the opportunity costs of parenthood, and help alleviate work-family conflict and overload. These costs have been repeatedly identified as the major sources of the parenthood deficit in emotional well-being in industrialized societies (Pollmann-Schult 2014; Stanca 2012), and their dispersion across countries may help explain the disparate impact of parenthood on happiness across Western nations (Aassve, Mazuco, and Mencarini 2005; Ono and Lee 2013).

Since employment better fits the aspirations of most parents and is associated with higher fertility rates (Esping-Anderson 2009; McDonald 2000), we focus on four specific policies that facilitate employment among mothers and fathers rather than subsidizing homemaking in the EU (Misra, Budig, and Boeckmann 2011). First, two types of leave policies - paid parental/maternity leave for infant care, but more importantly, paid sick and vacation days that can be used for short term family care and support beyond the period of infancy - have been shown to dramatically improve well-being among parents (Gornick and Meyers 2003;

¹By opportunity costs, we refer to the time and labor parents spend caring for children that prevents both their own human capital formation (education, training, work experience) and time in the labor force earning wages.

²While economists note that the U.S. does provide a substantial amount of monetary support to families, much of this is nested in our tax code's elaborate system of deductions and credits for housing, dependent care, and health care; and much of it is means-tested so unavailable to working and middle class families (Folbre, 2008).

³The limitations of the FMLA are well known; the law only guarantees time off without pay and covers only those workers who meet its job tenure and work hour requirements, while exempting small employers completely.

Heymann et al. 2007; Hyde, Klein, Essex, and Clark 1995). The extent of subsidized public sector childcare is also important (Gornick and Meyers 2003; Waldfogel 2001) because high quality, low cost childcare improves parental well-being through both its income-enhancing and stress-reducing impact (Ross and Mirowsky 1988; Savolainen et al. 2001; Stanca 2012). Finally, we consider work schedule flexibility, or the degree to which hours and schedules are under employee control. Some OECD nations (e.g. Sweden, Denmark) have strong work-time policies that enable parents to temporarily reduce their work hours or set maximum hours per week, while others such as Great Britain support flexible work schedules through “right-to-ask” laws (Hegewisch and Gornick 2008). Golden, Henly, and Lambert (2013) find a significant association between schedule flexibility and reported happiness, while Grzywacz, Carlson, and Shulkin (2008) report lower levels of stress among employees who control their work hours and schedules.

The social, economic, and cultural factors that gave rise to work-family reconciliation policies in both English-speaking and European countries are highly complex and were a societal response to falling fertility rates, the decline in male wages, the increase in female employment, the rise of dual earner and single parent families, as well as gender inequalities in the home and workplace (Esping-Anderson 2009; Gauthier 1996; Orloff 1996; Wennemo 1992). Whatever their origin, evidence strongly suggests that publically provided resources reduce the stress associated with raising children to adulthood (Gornick and Meyers 2003; Heymann et al. 2007).

To the extent that public policy alleviates the time and energy demands, work-family conflict, childcare stress, and financial strain that contribute to lower levels of emotional well-being among parents relative to non-parents, the parenthood gap in happiness may be smaller in nations that provide these resources. In other words, the larger policy context may help explain the extent to which parents residing with children experience more stress and lower levels of happiness than those not living with children.

We acknowledge that some countries may have stronger social insurance for parents because they share other confounding characteristics, such as higher affluence, stronger productivity, and higher rates of female labor force participation. For this reason, we carefully control for confounding factors in our analyses, such as country GDP, mean hours worked, the presence of child or family allowances, female labor force participation rate, and total fertility rates, since these may correlate with both the aforementioned policies and parental happiness.

The Gendering of Parenthood and Happiness

While the research literature shows few differences in overall well-being between mothers and fathers (Evenson and Simon 2005; Margolis and Myrskylä 2011), mothers still perform substantially more domestic labor and child care than fathers in OECD countries, even when employed full-time (Pettit and Hook 2009). This suggests that mothers' emotional well-being may benefit more from public policies designed to reduce the fiscal and opportunity costs of parenting. But there is both significant cross-national variation in the extent to which fathers participate in child care, and significant growth over the past few decades in average paternal participation in childrearing. The best available evidence (Duvander and Johansson 2012; Haas and Hwang 2008; Hook 2010; Knudsen and Waerness 2008) shows

countries with stronger work-family reconciliation policies elicit more paternal care and greater gender egalitarianism in domestic work. So policies we believe reduce parental stress may also encourage fathers to engage more in family life – thereby reducing any gender gap in happiness in these countries.

There are other substantive reasons to posit few gender differences in the relationship between policies and parental happiness. Studies may not consistently find gender differences in parental happiness because while mothers are more distressed by work-family conflict and overload than fathers, fathers are more distressed by the financial strains of parenting and their ability to be involved fathers while still providing for their families (Aumann, Galinsky, and Matos 2011; Simon 1995, 1998). Thus, policies that promote mothers' employment as well as promoting paternal care without employment penalties may alleviate much of the strain that impacts both mothers' and fathers' happiness. Our analytic plan will specifically test for any gender differences in the effects of work-family reconciliation policies on parental happiness, but we believe the evidence of slow gender convergence in paid work and family care, and parents' mutual interest in limiting the financial burdens of parenting, will lessen the likelihood of gender-specific policy effects.

In this paper, then, we examine cross-national variation in the *disparity* in happiness between parents and non-parents in 22 OECD countries. We focus on happiness because it is a frequently used global measure of emotional well-being available in many international data sets (Kahneman et al. 2010; Margolis and Myrskylä 2011; Ono and Lee 2013). We also assess whether the availability of specific work-family reconciliation policies such as parental leaves, paid sick and vacation leaves, work flexibility, and subsidized childcare help explain cross-national variation in the parenthood gap in happiness, with a focus on possible gender differences in policy effects. Because societies differ in their social, economic and cultural histories (Misra et al. 2011), level of social inclusion and inequality (Mandel and Semyonov 2005), population health (Wilkinson 2006), and emotion culture (which includes norms about the feelings citizens should feel and express (Hochschild 1979; Veenhoven 2010), we focus on the *relative gap* in happiness between parents and nonparents across countries. We are not suggesting that parents residing in countries that provide more public support to families are always happier than parents whose countries offer less assistance. Many factors besides family policies influence self-reported happiness across countries (Helliwell et al. 2010; Stevenson and Wolfers 2008). But the happiness gap between parents and nonparents may be smaller in countries that have more generous policy provision for families compared to those with less generous policy provision.

Data

To evaluate the parenthood gap in happiness across country-level policy contexts, we draw upon individual-level representative survey data as well as a variety of country-level policy and economic data sources to run multilevel models of individual happiness nested within countries. Representative data were obtained from the 2006 (Round 3) and 2008 (Round 4) releases of the European Social Survey (ESS) as well as the 2007 and 2008 releases of the International Social Survey Programme (ISSP). The ISSP and ESS are routinely used in cross-national research aiming to draw representative conclusions about processes or

attitudes concerning parenthood, gender or happiness (e.g., Aassve, Goisis and Sironi 2012; Brooks and Manza 2006; Charles and Bradley 2002; Huijts, Kraaykamp and Subramanian 2011; Ono and Lee 2013). We chose to use both surveys to maximize the number of countries in our analysis and the quality of the data on each country. In 2007 and 2008, country-specific response rates for the ISSP averaged about 50%. In contrast, the ESS had substantially better rates, averaging around 60%. For this reason, we opted to use country samples from the ESS whenever possible in order to produce policy estimates that are less biased by survey nonresponse. We then added supplementary English-speaking countries from the ISSP (Australia, New Zealand and the United States). Sensitivity analyses (available on request) show that our substantive conclusions are not affected when we omit these supplementary English-speaking ISSP countries.⁴ The ESS used random-probability sampling to conduct in-person interviews with respondents aged 15 or older in 25 (in 2006) and 31 (in 2008) European countries, respectively. Each ESS administration contained core questions on respondents' sociodemographic characteristics and level of happiness. More information on the ESS design and country-specific idiosyncrasies in data collection procedures can be found on the ESS website (<http://ess.nsd.uib.no/ess/>). The ISSP, distributed by the GESIS Data Archive for the Social Sciences (<http://zacat.gesis.org/>), features the same core questions. Although sampling procedures differ somewhat by country, the ISSP generally employs either a simple or multi-stage stratified random sampling procedure that elicits respondents aged 18 or older. Most countries have sample sizes greater than 1000 per survey wave. Because the ESS and ISSP samples are nationally representative, all reported analyses are unweighted, though we also estimated country-specific weighted models and found no substantive differences.

Since only the ESS asked respondents whether they had children living outside the household, our parent subsample consists of *persons residing with children*, while our nonparent subsample is comprised of childless adults as well as non-custodial parents of minor children and parents of adult children. Because research on the U.S. finds that neither non-custodial nor empty-nest parents report higher levels of emotional well-being than persons who never had children (Evenson and Simon 2005), our analyses may underestimate the parenthood gap in happiness. In other words, the analyses provide conservative tests of our hypotheses regarding the impact of public policies on parental status differences in happiness.

Our analyses use a concatenated dataset that includes ESS observations for 19 European countries for which sufficient policy information is available as well as ISSP observations for 3 English-speaking countries (Australia, New Zealand and the U.S.). The 40 resultant country observations for 22 countries are listed in Appendix 1. We use multiple observations on the same country but from different closely spaced years where available to increase survey reliability (Andersson, Glass and Simon 2013) and maximize the number of clusters at the second level. This enables us to include more country level covariates while

⁴We examined country correlations between survey response rates, mean happiness, and rates of parenthood. We found that mean happiness negatively correlated with response rates whereas rates of parenthood correlated positively with response rates. This suggests that as response increases, individuals with lower levels of happiness or with children at home are more likely to respond to the survey. So estimates of the effects of parenthood may be biased by suboptimal response rates. Prior work already has shown that some conclusions from the ISSP may be biased by data collection or response rate issues (Heath, Martin and Spreckelsen 2009).

preserving statistical power, a strategy used by prior researchers (Beckfield 2006; Brooks and Manza 2006). All individual level variables for respondents, including parental status, are obtained from the ESS and ISSP concatenated data described in the measurement section below.

At the country level, the primary mediating variables are family policy indices, constructed to measure policies regarding (1) paid childbearing leave, (2) paid vacation and sick days, (3) flexibility in work hours and schedule, and (4) childcare assistance. Wherever possible, we used extant country-specific policy information from the OECD data base, as other researchers have done (Billingsley and Ferrarini 2014). In developing the indices for paid leaves, we consider maternity and parental leaves for childbirth and adoption, sick leave, vacation leave, personal days, and leave for family medical care. For each type of leave we count the duration of paid leave at any level of payment, with another indicator for the inclusiveness of the eligibility criteria for leave. For employment flexibility, we consider both the right to temporarily reduce work hours for workers providing care as well as the ability to choose days and hours of work. For childcare assistance, we measure the extent of public subsidy for the cost of care by calculating the average cost of substitute care for a two-year old child, including any personal tax subsidies or deductions. This proved to be a more valid indicator than the extent of direct public provision of care, since some countries financially subsidize private care providers or use a combination of strategies at different ages. Rates of maternal labor force participation also vary across countries, making the proportion of young children in publicly provided care a confounded indicator as well.

We also create a Comprehensive Policy Index that combines the availability of these policies into a single indicator. Many work-family researchers have noted that single policies cannot be expected to alleviate the myriad ways in which parenthood produces stressors, but that policy “packages” covering multiple objectives (paid time off, work schedule flexibility, and cost subsidies) are most likely to show large effects on parents (Gornick and Meyers 2003)

In order to create at least some time between the measurement of policies and their expected outcomes in the form of future happiness, each policy variable is constructed based on the policy particulars in effect in that country in the year 2000, creating an average 6-year lag. Countries continually refine and alter their family policies, creating some instability in the search for policy impacts. But since most policy changes over the past two decades have increased family assistance rather than restricting it (Hegewisch and Gornick 2008), policy impacts on post-2005 happiness based on policies in effect in 2000 are more likely conservative estimates of true effects rather than overestimates. Detailed description of each policy is provided below.

Measurement

Dependent Variable: Self-Reported Happiness

In the ESS, respondents designated their current level of happiness using an 11-point scale (“Taking all things together, how happy would you say you are?” 0=extremely unhappy to 10=extremely happy). In the ISSP, respondents instead used a 4-point scale (“If you were to consider your life in general these days, how happy or unhappy would you say you are, on

the whole?” 1=very happy to 4=not at all happy; reverse-scored). We converted the 4-point scale to the 11-point format (using data points 2.5, 5.0, 7.5 and 10.0, respectively). This does not result in perfect conceptual harmonization --two of the three “happiest” countries come from the ISSP and this is may be a direct result of the truncated 4-point ISSP scale harmonized to the 10-point ESS scale (see Appendix 2). For this reason, we do not focus our analysis on the determinants of happiness, per se, but on the size of the within-country gap in happiness between parents and non-parents, which is only marginally affected by harmonization (the size of this gap is uncorrelated with overall mean happiness). To normalize the happiness distribution and substantially improve model fit, we used the natural log of self-rated happiness.⁵

Country-Level Independent Variables: Policy Context and Sociodemographic Controls

Policy: Combined Paid Vacation and Sick Leave (Average Number of Weeks)—

Information on standard number of weeks of available vacation and sick leave was pooled from a variety of sources (Gornick and Meyers 2003; International Labour Organization 2001; International Social Security Association 2002, 2003; Jorgensen 2002; Ray, Gornick and Schmitt 2009; Rho et al. 2009). Vacation and sick leave are both expressed as number of paid weeks, determined by official government policies. Because both vacation and sick leave support the raising of a dependent child, these are averaged to create a combined measure used in multilevel analyses.

Policy: Paid Leave Available to Mothers and Parental Leaves (Number of Weeks)—

Weeks of paid maternity and parental leave were found from a variety of sources identifying country-level policy mandates (e.g., Council of Europe Family Policy Database 2009; Kamerman and Kahn 2004; International Labour Organization 2001).⁶ Leave available to mothers was calculated as the sum of any unique paid maternity leave plus any additional standard parental leave available to either parent. Parental leave was measured as only leave available to either parent.

Policy: Work Flexibility (% of Establishments)—

Our OECD work flexibility measure (OECD 2010) focuses on flexible allocations of work time that do not reduce overall work time. Specifically, we measure work flexibility at the country level as the proportion of companies or establishments providing either the ability to vary starting and ending times of daily work or the possibility to accumulate hours for time off. Establishments counted towards this percentage employ at least 10 workers; agriculture sector is not included. While company support for flexibility can occur without policy legislation, this indicator differentiates between nations with “right to request” or statutory flexibility laws and those without such laws while accounting for market-based firm practices in other nations.

⁵In order to transform the happiness variable, we first reverse-coded it to create a positive rather than negative skew and then added one so that no cases had a value of zero (for which the natural log is undefined). To restore a positive coding for happiness, each independent variable was then subtracted from the variable's maximum value (essentially reverse coded). The original 11-point synthetic variable and transformed (reverse logged) variable correlated very highly ($r = 0.94$). Results did not differ when happiness was not log-transformed.

⁶Detailed information on maternity and parental leave measure construction is available on request.

Policy: Cost of Childcare—Information on the cost of childcare for a two-year-old, expressed as a percentage of median wage, was available for a subset of European countries (OECD 2005). We used this measure for several reasons. Because our analyses are not limited to EU countries, but include English-speaking countries without much direct welfare—state provision of services, we needed a measure that could incorporate “tax policy” systems with systems of direct provision of childcare to avoid biasing our policy measure. Other metrics used by researchers, such as the % of children in publicly funded care, work well for the EU but underestimate childcare provision in English-speaking countries. Developing a measure that fairly represents all systems required a target age and target metric. We selected age 2 since most well-compensated parental leaves have ended by that age while primary school has not yet started, and selected a unit cost metric (median childcare cost as % of median workers' wage) to measure the extent of public assistance for the average employed parent. This, of course, is not a perfect measure (it excludes the quality and availability of care) but does have the virtue of not excluding countries that subsidize private markets for care primarily through income tax deductions.

Policy: Presence of Major Leave Eligibility Restrictions—Country-mandated restrictions on leave eligibility were originally obtained from the Council of Europe Family Policy Database (retrieved at http://www.coe.int/t/dg3/familypolicy/database/default_en.asp). Eligibility restrictions were ranked using a four-point ordinal scheme: 1=no restrictions to be eligible for paid leave (leave includes students and self-employed), 2=only paid employees eligible, 3=some minor restrictions (must work or pay into social insurance for a specified period of time) and 4=some major restrictions (eligibility requires more than 4 months of employment). Preliminary analyses showed that some major restrictions in particular mattered for happiness, so this variable was recoded as a dichotomy (0=no major restrictions, 1=major restrictions). This indicator controls for the risk that less than universal coverage might negate the positive benefits of paid leaves.

Policy: Payment Into Social Insurance—A country-level variable was created from the Council of Europe Family Policy Database to indicate whether citizens pay a payroll tax to qualify for benefits rather than universal provision from general tax revenues (0=no payment, 1=payment into social insurance). This variable was constructed to control for the possibility that high levels of payroll taxation might negate the positive benefits of paid leaves on happiness.

Comprehensive Policy Index (CPI)—Because work-family reconciliation policies may reduce parental stress most effectively as a package rather than in isolation, we created a three-item policy index consisting of combined paid leave available to mothers, paid vacation and sick leave, and work flexibility ($\alpha=.62$).⁷ To calculate this index, we converted each of the three policy measures to a percentage score (defined as a country's generosity relative to the highest-scoring country); these percentage scores were then summed to produce a comprehensive index with a theoretical range of 0 to 3 (observed

⁷Social insurance, major leave restrictions, were not included in this index because they are dichotomous measures without sufficient variation across the European Union; the cost of childcare could not be included because this information was only available for a limited number of European countries.

range is .15 to 2.67). This index was dichotomized for our final models given its flat distribution (most countries clustered at either the high or low ends of the distribution), so that countries with a high value for the CPI (at or above the median of 1.52) were assigned a value of 1, and all others zero. This significantly improved model fit.⁸

Sociodemographic Control: 2006 Gross Domestic Product (GDP)—GDP per capita, in thousands of 2006 U.S. dollars, was obtained from The World Bank database (World Bank 2006). Because economic development influences policy generosity as well as national levels of happiness, we include this basic economic measure as a country-level control (e.g., Beckfield 2006).

Sociodemographic Control: 2005 Total Fertility Rate—We include the total fertility rate (TFR) for 2005 to help control for the degree of selection into parenthood in each country. Countries with low TFR's presumably experience stronger selection into parenthood, which may contribute to overall parental happiness relative to countries with higher TFR's where parenthood is more ubiquitous. TFR estimates were available from the OECD Family Database (OECD 2013).

Sociodemographic Control: Average Family Allowance—Data on family allowances (cash payments to families with children) were obtained from the Gauthier Comparative Family Benefits Database (1960-2008; Version 3). The allowance is defined as monthly allowances for the first and second child in national currency, adjusted for purchasing parity. Allowance is averaged across years 1999 -2001 (due to inconsistent data available from 2001 through 2005).

Sociodemographic Control: Female Labor Force Participation—Women's percent of the labor force in 2005 was imported from the 2011 OECD Factbook. It is defined as the share of working aged women who are employed. Our inclusion of women's labor force participation is consistent with other cross-national studies examining demographic factors relevant to gender equality or welfare policy provision (e.g., Brooks and Manza 2006; Charles and Bradley 2002). We examined this measure instead of a more targeted indicator of mothers' labor force participation as the latter is more clearly endogenous with respect to family policy (Misra et al. 2011).

Sociodemographic Control: Average Work Hours—Average work hours are based on 2005 average annual hours actually worked per worker, sourced from OECD Statistical Extracts. The average comes from country-specific calculations (see Statistical Extracts: stats.oecd.org).⁹

⁸During our initial analyses, we determined that a few country clusters had high leverage (via DFBETAS) and were substantially altering our CPI estimates. However, iterative analysis of influential country clusters (van der Meer et al. 2010) led to a substantial number of countries being mechanically excluded. Therefore, to maintain an adequate number of countries in the analysis, we considered whether a different specification of CPI would provide a better fit to the observed happiness distribution. Based on non-nested information criteria (i.e. BIC), a dichotomization of CPI provided superior fit, which is broadly consistent with other cross-national research that also uses categorical measures of state provision or family support in certain instances (e.g., Brooks and Manza 2006; Esping-Andersen 2009). Just as important, dichotomization of CPI resolved leverage issues with country clusters, allowing us to obtain a consistent policy estimate.

⁹We considered a variety of alternative country-level demographic controls that might affect either selection into parenthood or parental happiness: country-specific poverty rate assessed as 50% of median income, level of income inequality (Gini coefficient),

Individual-Level Independent Variables: Parental Status and Sociodemographic Controls

Has Child—We identify the presence of children in the household (0=no children in household, 1=one or more children in household) either directly in the ESS (the respondent was asked whether any children were currently living at home) or indirectly in the ISSP (the respondent was asked to choose from a list of different household compositions; all compositions including children were used to identify a child in the household).

Gender—In both datasets, gender was measured as male or female (0=male, 1=female).

Age—We measure age in years; with its squared term included to account for any nonlinearities.

Income—Across both datasets, we employed a ten-category continuous measure of income. This measure reflects either the respondent's subjective (ESS) or objective (ISSP) income relative to other country residents. ESS respondents were asked to report the household's weekly, monthly, or annual income by choosing from a ranked list of 12 (ESS 2006) or 10 (ESS 2008) subjective categories based on the family's income relative to other families' income. To make the 2006 format commensurable with the 2008 format, the lowest and highest income categories were combined to the next-lowest or highest category (respectively). In the ISSP, respondents reported the household or family's monthly or annual income using local currency. To make this format commensurate with the ESS, we recoded income to within-country deciles (1 to 10).

Married or Living With Partner—In both the ESS and ISSP, respondents reported legal marital status and, if not married, whether they resided with their partner. We combined these two indicators to determine partnership status (0=no partner/spouse, 1=living with partner/spouse).

Full-Time Work—Across datasets, we treat employment as a dichotomous variable. In the ESS, full-time work was demarcated at 35 hours per week (1= more than 35 hours, full-time). In the ISSP, full-time work was self-reported by the respondent as their labor force status.

Education (Post-secondary schooling)—We model education as the possession of at least some post-secondary schooling or higher degree receipt.¹⁰ Our categorical treatment of

mothers' labor force participation rate, proportion of single parents, percent foreign-born, and country unemployment rate. However, none of these variables improved model fit or altered the effect of policy context on the parental gap in happiness in preliminary models.

¹⁰In the ESS, respondents' education was reported using either the number of years or the ISCED educational coding system. The ISCED system is preferable as it better captures between-country educational attainment, but 37.4% (in 2006) and 32.8% (in 2008) of respondents did not have ISCED codes. ISCED codes correlated highly with number of years (recoded with 20 as the maximum value), $r_s = 0.76 - 0.80$ among respondents who had both types of information. We therefore exploited the very low missing data (about 1% of survey sample) for years of education by recoding it into educational categories. A tabulation of years of education by ISCED category for those with both educational measures available (using the 2006 ESS) showed that 89.7% of respondents with some tertiary education or higher (according to the ISCED system) also reported 13 to 20 years of formal education. Because the ISSP's harmonized ISCED education variable had only about 1% missing data across both years, we used it directly. Those who reported post-secondary education without a university degree were coded as possessing some postsecondary education while those reporting a degree were coded as having a college degree.

education is in keeping with cross-national classifications of educational credentials and systems (e.g., Charles and Bradley 2002).

Professional Occupation—Across both datasets, we noted whether the respondent held a managerial or professional occupation (0=not manager or professional, 1=manager or professional) based on the Bureau of Labor Statistics ISCO coding system.

Descriptive statistics on all variables are listed in Table 1 and by country in Appendix 2. As shown in Appendix 2, countries varied as expected in terms of basic demographics like marriage rate and full-time labor force participation. For instance, rates of marriage were notably low in Scandinavian countries where cohabitation is relatively common.

Analytic Strategy

We model the effects of public policies on parental status differences in happiness using two types of multilevel models (Singer 1998). The fixed-effects procedure models country-level differences in the effect of parenthood on happiness, net of sociodemographic variables. The mixed-effects procedure examines whether parenthood might have differing effects on happiness dependent upon country-level policy contexts.

In the fixed-effects procedure, happiness was first regressed on individual sociodemographic control variables with a variable intercept for each country (the U.S. was the reference category). Parental status (Has Child) was then interacted with each country indicator to reveal country-level differences in the effect of parenthood on happiness relative to the U.S., which served as the reference country. Results from these fixed-effects models are presented in order to rank order the effects of parenthood across countries, net of sociodemographic differences within and between countries. The estimated multilevel models producing these fixed effects are based on the following equations:

$$Y_{ij} = \beta_{0j} + \beta_{1j}X_{1ij} + \beta_{2j}Z_{ij} + E_{ij} \text{ where } (1)$$

Y_{ij} = happiness of individual i in country j

X_{1ij} = parental status (1 if parent)

Z_{ij} = vector of individual attributes (age, gender, education, income decile, marital and employment status, etc.)

$$\beta_{0j} = \lambda_0 + \lambda_1 X_{1j} \text{ where } (2)$$

X_{1j} = vector of variables representing each country in the analysis set with U.S. as referent

$$\beta_{1j} = \alpha_0 + \alpha_1 X_{1j} \text{ where } (3)$$

X_{1j} = vector of variables representing each country in the analysis set with U.S. as referent

This baseline model yields a vector of coefficients λ_j and α_j that describe country differences in baseline well-being and the unadjusted effects of parenthood on well-being. Equation 3 is our primary equation of interest, since it describes country level variation in the parenthood gap in well-being. Significance tests on vector α_j tell us which countries have significantly smaller or larger parenthood gaps in well-being relative to the United States.

In the mixed-effects procedure, happiness was regressed on policy and economic variables (country level) and sociodemographic controls (individual level) using a mixed-effects multilevel estimation procedure (see Rabe-Hesketh & Skrondal 2008). For each country-level policy variable, models were constructed that included both country-level sociodemographic controls and all individual-level covariates. Parenthood was specified as a random covariate in order to model the country-level variability in the effects of parenthood on happiness demonstrated by the fixed-effects analyses. Because likelihood ratio tests consistently favored the random-coefficient model over a model constraining the effect of parenthood to be equal across countries (Chi-square $p < .001$), a random-coefficient specification is consistently used.

Each policy was first entered as a main effect covering all individuals; then, a cross-level interaction model was estimated, in which the policy was interacted with parental status.¹¹ All reported coefficients were obtained using a procedure that guards against influential country observations.¹² Auxiliary analyses did not reveal any issues with repeated country sampling, similar to previous research (Beckfield 2006; Ruiter and De Graaf 2006), since errors were allowed to correlate across surveys for the same country. Because policies are expected to have directional effects, significant tests for policy main-effects and policy-parenthood cross-level interactions are one-tailed (Beckfield 2006). All other tests are two-tailed.

In several cases, policy variables were transformed either to rank-order or categorical variables. These transformations served two key methodological purposes. First, they stabilized policy estimates for a reasonable number of country observations. Second, they formed sensible treatments of policy variables with highly skewed or observably discrete distributions in raw units. Transformations and final descriptive statistics for policy variables are given in Table 2.

¹¹Cluster-based mean centering of parenthood or other sociodemographic covariates does not alter any of the presented findings, nor does grand-mean centering of country-level variables (see Enders and Tofighi 2007 for a discussion). Thus all estimated coefficients were obtained using raw variable scores.

¹²Van der Meer and colleagues (2010) recommend looking for influential country observations using standard leverage diagnostic tools (e.g., Cook's d , DFBETAS). Influential country observations were eliminated iteratively until the DFBETAS threshold ($2 / \sqrt{n}$) was not exceeded for the policy estimate (i.e., until the policy slope stabilized). The obtained set of observations was then utilized for the multilevel mixed-effects analyses. This means in practical terms that the number of country observations in the multilevel models is typically 28 to 31. Additional analyses taking into account autocorrelation due to repeated observations of the same country did not reveal any problems (see also Beckfield 2006). Specifically, we estimated three-level mixed-effects models nesting respondents within country observations within countries. These models produced the same findings for policy main effects and cross-level interactions, and for these models likelihood ratio tests similarly rejected fixed-coefficient in favor of random-coefficient specifications.

The mixed effects models were estimated from the following modification to equation 3, which sequentially includes each of the policy indicators and the comprehensive policy index, as well as country level control variables, to yield

$$\beta_{1j} = \alpha_0 + \alpha_2 X_{2j} + \alpha_3 X_{3j} + U_j \text{ where } (3a)$$

X_{2j} = vector of family policy variables (one at a time included given limited statistical power)

X_{3j} = vector of country-level variables

Significance tests on the vector of coefficients α_2 determine whether countries that provide greater policy assistance to parents have less negative effects of parenthood on well-being. Comparisons of the effect size for the policy variables help us understand which policies are most important for increasing parental happiness. With limited degrees of freedom, we were judicious in our selection of country sociodemographic controls for each model, and cognizant of the cumulative number of significance tests performed at the country level. For this reason, we eliminated several country indicators at this stage (from vector X_{3j}) because their deletion did not alter the size or significance for either parenthood or policy coefficients— these include average work hours, average family allowance, and female LFP rate, leaving only GDP and TFR as country-level controls.¹³

The inherent difficulty of identifying cross-national differences in policy regimes as the source of country-level differences in outcomes cannot be avoided, however. Multilevel models use contextual information in the most efficient manner possible, but are still subject to the problems of causal inference inherent in regression analysis of cross-sectional data. We attempt to minimize these by using measures of policy regimes that are lagged five years from our outcome measure and by including specifically relevant country-level controls.

Results

Our first task entailed running fixed effects models estimating the mean happiness of countries after adjusting for each country's particular sociodemographic profile. This is important because happiness levels may differ across countries only because their populations differ in important respects (more young adult, single, or poor residents, for example, could lower overall mean happiness). The coefficients for these country-specific intercepts are the parameter estimates for equation 2 above, and represent the difference between the intercept for the United States (the reference group) and every other country in the sample. We present these country-specific effects on overall happiness in Appendix 3 but do not discuss them here. We add equation 3 to the preceding fixed effects model to estimate a country-specific interaction with parenthood, which tells us which countries have a larger or smaller effect of parenthood on happiness relative to the U.S., our outcome of interest here. Table 3 present the fixed effects results for country-specific variation in the happiness

¹³Results with the full set of country-level controls are available from the authors upon request.

gap between parents and nonparents. Gaps are calculated from the level 2 coefficients and presented in rank order of size. To perform sensitivity checks on the rankings, we estimate the fixed effects model separately for countries in the 2006 and 2008 administrations of the European Social Survey (Columns 2 and 3). This showed that temporal instability and unreliability in the measurement of happiness produced little variation in the ranking of nations.

Column 1 in Table 3 shows that the U.S. has the largest adjusted gap in happiness between parents and nonparents (-.127 on the logged happiness scale) while the remaining countries have either smaller gaps or net increases in happiness among parents, with Russia, France, Finland, Sweden, Norway, Spain, Hungary and Portugal showing net positive associations with parenthood. In these countries, parents range from being only slightly happier than nonparents (increases in happiness of about 1 percent compared to nonparents for Russia and France) to significantly happier than nonparents (increases of up to 8 percent from the baseline level of nonparents). In the remaining 14 countries, parents are *less* happy than nonparents, with percentage decreases from the baseline happiness of nonparents ranging from about 0.1% to 13% less happy). But even Ireland, the nation closest to the U.S. in rank, has a gap that is about 20% smaller than the U.S. parental happiness gap.

Our sensitivity analyses separate the 2006 and 2008 ESS administrations and recheck the rank ordering of countries' parental happiness gaps. Columns 2 and 3 of Table 3 display the results, showing a moderate amount of instability over time in the coefficient sizes for several countries (Russia, France, Germany, Poland, in particular). Yet the rank order of countries changes only slightly from the 2006 to the 2008 administration of the ESS. All countries continue to show smaller parental happiness gaps than the US, and in some countries this gap is negligible or even reversed. Given this country-level variation in the impact of parenthood on happiness, we model the structural origins of this variation using cross-national differences in institutional policy supports that might decrease parental stressors.

The mixed-effects multilevel models, as summarized in Table 4, estimate variation in the effect of parenthood on happiness across industrialized countries (see Appendix 4 for full models). We first estimated main effects models that report the effect of parenthood (at the individual level) and each policy (at the country level) on happiness for all individuals in the cross-national sample. These are reported in Rows 1 and 2 of Table 4. In Row 2, parenthood has a consistently negative, though not uniformly significant, main effect on happiness across nations. Work-family reconciliation policies seem to have neutral or positive effects on happiness across nations, judging by the positive estimates for vacation/sick leave, workplace flexibility, and paid parenting leaves in Row 1 (although only the workplace flexibility coefficient is statistically significant). In contrast, higher childcare expenditures, payment into social insurance, and major eligibility restrictions on leave policies negatively affect happiness.

The negative effects of benefit eligibility restrictions and payment into social insurance on happiness are reasonable since they affect both parents and nonparents by presumably reducing either income or benefit eligibility. The main effect of childcare expenses on the

happiness of all respondents is more curious – these expenses affect only parents of young children so it is not immediately clear why this decreases overall happiness. We suspect that childcare expenses might be associated at a more general level with domestic spending on social welfare, but inclusion of a variable measuring % of GDP on welfare state spending did not alter this coefficient and did not itself have a significant positive association with personal happiness.

In the next panel (Rows 3-5 of Table 4), we added cross-level interactions of each country-level policy or contextual variable with parenthood at the individual level. This addresses the key question of whether – and to what extent – social policies adjust the association between parenthood and happiness. These coefficients represent the adjustment to the negative effect of parenthood on happiness achieved by a given policy; thus, positive interaction coefficients denote a reduction or institutional buffering of the negative impact of parenthood. Paid vacation/sick days completely reversed the parental happiness gap (reversing it from -0.057 at minimal policy support to 0.025 at maximum support), and paid maternity and parenting leaves also reversed the negative impact of parenthood on happiness (moving parental happiness up by about 0.4 from the lowest category of benefit to the highest for both policies). The negative effects of childcare costs on happiness are significantly exacerbated for parents; this means that nations reducing the cost of care with some form of social provision from the top percentage (24.7% of median wage) to the bottom percentage (4.5% of median wage) in our sample increased parental happiness by .081. These effects are graphically presented in Figure 1. In contrast to childcare expenses, eligibility restrictions and payment into social insurance are less negative for parents than nonparents, presumably because parents are more likely to be eligible for and use social insurance, raising parental happiness by .046 and .037 respectively.

Work flexibility is the only social policy that does *not* increase happiness more for parents than nonparents; the results show work flexibility is less important for parents' happiness than nonparents, although the interaction effect is small ($b = -.004$). Thus, both parents and nonparents benefit from living in nations with a larger percentage of establishments offering flexible schedules, but nonparents appear to benefit slightly more. The policies designed to facilitate flexible employment are relatively recent in the EU nations and U.K., and we suspect their full implementation might alter this pattern in the future. Currently, flexible work may be disproportionately found in male dominated jobs in these nations, as it is in the U.S., and thus cannot benefit employed mothers and other caregiving adults to the same extent.

Using our comprehensive policy index (CPI), combining paid vacation/sick leave, paid leave available to mothers, and work flexibility, we test whether those nations scoring higher on this policy array achieve a smaller parental gap in happiness. As shown in Table 4, the main effect of the CPI on all respondents' happiness is strongly positive; those nations in the top half of the CPI distribution show significantly greater levels of happiness than those in the bottom half ($b = .127$ at $p < .001$). Moreover, the interaction with parental status makes this effect even stronger ($b = .04$ at $p < .01$). The interaction is so large that it completely nullifies the negative effect of parenthood on happiness for those countries in the top half of the CPI distribution. Thus, the countries offering the strongest family policies exhibit a net positive

effect of parenthood on happiness, while those offering the weakest policies continue to show a parental happiness deficit compared to nonparents. This is graphically depicted in Figure 2.

Up to this point, we have constrained all model coefficients to be equal across women and men. In Table 5 we relax this constraint, running separate models for women and men and allowing all main effects and interactions to vary by gender. We display results for the separate gender models, noting any significant differences between policy coefficients for women and men. Most of the differences across columns 2 and 3 show only minor discrepancies, and none are statistically significant. But whenever gender differences appear, they clearly show fatherhood shapes men's responsiveness to family policies more than motherhood shapes women's. In other words, our comprehensive policy index increases the happiness of all women and fathers.

Surprised by the stronger response to policies among fathers than mothers and reasoning that perhaps mothers are less sensitive to work-family reconciliation policies because not all work outside the home, we reran all models for the sample of parents only, comparing policy impacts among mothers and fathers by employment status. These results show that employment has little to do with the pattern of gender differentiation. Rather, women report greater happiness in countries with strong family policies irrespective of whether they are mothers, while among men, strong family policies only increase fathers' happiness. Comparing mothers and fathers directly, we see policy coefficients that are quite similar but slightly larger in magnitude for mothers.¹⁴

Discussion

In contrast to research documenting the benefits of social roles and relationships for emotional well-being, parents report lower levels of happiness than childless adults in many industrialized nations. The predominant explanation of this disparity is that parents are exposed to a number of stressors that undermine their emotional well-being. Despite considerable cross-national research on parenthood and happiness, however, no studies have disaggregated the family policies intended to reduce parental stressors to determine which policy contexts alleviate the happiness gap between parents and nonparents in advanced industrialized nations.

In this paper, we analyzed data on individuals residing in 22 European and English speaking OECD countries for which policy information was available in order to assess cross-national variation in the gap in happiness between parents and nonparents. We theorized that the parent gap in happiness should be smaller in countries that provide more resources and social support to families than in those that provide less public assistance. The results of our analyses confirm that the policy context of nations explains up to 100% of the parenthood disadvantage within nations.

¹⁴We conducted further sensitivity analyses comparing partnered and single respondents of both genders, thinking that perhaps single parents (especially single mothers) would show greater responsiveness to reconciliation policies than partnered parents. But across genders, partnered parents' happiness was more affected by policies than single parents' happiness, and again partnered fathers were more responsive to policies than partnered mothers.

Our analyses revealed that not all developed nations exhibit a negative association between parenthood and happiness, and that substantial variation in the strength of this parent penalty on happiness exists across the remaining nations. Using multilevel fixed effects models, we found that the U.S. has the largest subjective well-being penalty for parenthood in this group of OECD nations, even after controlling for a host of individual level variables that affect parental happiness. This pattern contrasts with the pattern found in other developed nations, particularly the Scandinavian states and France, where parents report higher levels of happiness than nonparents.

We investigated the sources of this variation in the association between parenthood and happiness using individual family policies as well as a comprehensive policy index. The largest impact of public policies on happiness came from our comprehensive policy index, which measured the strength of the work-family “package” of paid parenting leave, work flexibility, and paid sick and vacation leave. In those countries with the strongest policy packages, the parental deficit in happiness was completely eliminated, accomplished by raising parent's happiness rather than lowering nonparents' happiness. Importantly, the stronger a country's comprehensive policy package, the happier their *general population* appeared to be. The synergistic value of these policies as a package, combined with their large positive effects on happiness for parents and nonparents, suggest that a multipronged approach to assisting parents is necessary to address the parental happiness deficit found in many Western industrialized countries.

Among specific policies that reduce the negative impact of parenthood on happiness, those lowering average childcare costs (as a percentage of the median wage) had the greatest impact, though we had information for only a limited subset of countries on childcare costs. This echoes Stanca's comparative research (2012) showing that children negatively affect the well-being of parents primarily through their financial impact. It is worth noting, however, that lower childcare costs show a positive association with happiness among all parents living with children, not just those with young children. This suggests that care subsidies may enable parents, especially mothers, to remain continuously employed and productive, resulting in higher family incomes, greater savings and assets, and increasing happiness later in the life course. Lower childcare costs may be picking up broader cultural support for childbearing and families as well, such as feelings of social inclusion and community support throughout the life course, since the childcare subsidy effect extends beyond parents with children (though it is significantly smaller in magnitude).

Vacation and sick leave showed policy effects on parental happiness almost as strong as childcare costs. These are policies that impact families at all stages of the life course, as important sources of support when time-based work-family strain becomes acute. Again, while paid time off is particularly important for families with minor children, it also increases the happiness of those not living with children though with a significantly smaller impact. No trade-off between the happiness of parents and nonparents could be found with respect to these specific policies.

Both paid leave available to mothers alone and parental leave were positively associated with increases in parental happiness as well, but not with the happiness of those without children

in the home. This makes abundant sense since these are leaves only available during the brief period surrounding the birth of a child. Again, paid childbearing leaves likely affect happiness by decreasing the long-term employment costs of childbearing for mothers and fathers while strengthening subsequent parent-child attachment (Haas and Hwang 2008; Misra et al. 2011). The type of policy matters as well. Significant eligibility restrictions weakened the impact of policies on the happiness of the general population, but less so for parents who presumably met these eligibility criteria more often. Payments into social insurance lowered the happiness of the general population but not for parents, who may benefit more from social insurance than nonparents.

These results strongly suggest that subsidized childcare and rights to paid time off from work may have the greatest impacts on parental happiness among the policy interventions studied, while displaying only positive associations with happiness among nonparents as well. Given the association between parental and child well-being (Cummings et al. 2005), these policies may improve child well-being as well. Funding strategies that reduce employer costs in providing paid leave and childcare, as is the case in many European states, might be key to their wider adoption in English-speaking countries. Recent successful campaigns for paid sick leave and universal pre-K programs in U.S. cities and states suggest broadening popular support of these initiatives.

These policies also seem to resonate with both women's and men's interests in managing work and family obligations. While we searched for gender differences in the impact of policies on parental happiness, we found none. Among both mothers and fathers, paid leave and lower childcare costs reduced the parenthood happiness penalty by roughly equivalent amounts.

However, we did find evidence that ALL women, not just mothers, reported greater happiness in the presence of strong family responsive policies as measured by our comprehensive policy index, but not all men's happiness benefitted from those same policies. Women in general may benefit from supportive family policies because they tend to provide day-to-day care to family members other than their children, including spouse/partners, aging parents, and friends. By contrast, men without children may be less affected by family policies because their caregiving obligations are minimal, thus policy support for care does not directly impact them. As men's care obligations increase in nations dedicated to fostering gender equality in care work and paid work, this pattern may slowly change. Even without broad national commitments to gender equality, no group of adults reported lower happiness in the presence of policies, bolstering research showing welfare state policies improve general population happiness (Flavin, Pacek, and Radcliff 2014).

We conclude with a discussion of this study's limitations. The lack of policy information for several countries in the ESS prevented us from including more European countries in our analyses. The possibility that selection in our sample may have influenced our results cannot be ruled out, so replication with a broader sample of industrialized countries is desirable. However, the countries available for analysis did include nations from all different types of welfare states, including maternalist, social inclusion, post-socialist, and non-interventionist (Esping-Anderson 1990; Hansen 2012; Mandel and Semyonov 2005; Stanca 2012).

In addition, power limitations prevented more precise measures of policy impacts on happiness. Because of limited sample size at the nation-state level, we were unable to include all policy measures in a single equation to compare the unique association of each with the size of the parenthood effect on happiness. We relied instead an overall index to capture policy generosity effects on happiness. We similarly could only identify parents with children still living at home, so our estimates of policy effects on parental happiness are most likely underestimated (and effects on the general population overestimated). This limited our ability to evaluate the importance of different policies for parents at different life cycle stages (e.g., parents with minor children, with young adult children, and those in the empty nest stage).

Our results are further tempered by the possibility of differences in individuals' selection into parenthood across nations. Where overall fertility is low, as in Spain or Italy, parents may be a more selected group who truly desire children. Where fertility is relatively high as in the U.S., individuals who are and are not strongly predisposed towards having children may become parents. This means parenthood may produce greater happiness in low fertility societies, while social policies have a greater impact on parental happiness in higher fertility countries (Deaton and Stone 2014). We modeled each nation's total fertility rate to address this confound, yet find that social policies improve parental happiness despite their role in promoting fertility itself. We believe fertility differentials have a greater effect on the size of nations' parental happiness penalty, underestimating the gap between parents and non-parents in low fertility countries.

Finally, our cross-sectional data do not permit us to make causal inferences about the relationship between parenthood and happiness within countries. We focus on cross-national variation in the association between parenthood and happiness, and increase the reliability of our results by lagging policy measures and including multiple waves of data on the same countries.

Despite these limitations, our research provides much needed insight into cross-national variation in the disparity in emotional well-being between parents and nonparents as well as the influence of public policies on this disparity. Consistent with the argument we advanced, the gap in happiness between parents and non-parents is smaller in countries that provide more resources and social support to families than in countries that provide less assistance. In addition, our research helps explain the anomalous finding that parenthood (unlike other major adult social roles) decreases rather than increases the subjective well-being of adults in many industrialized countries. Similar to marriage and employment, parenthood can provide personal gratification, a sense of purpose and meaning in life, social connections to others, and an important social identity. At the same time, however, the emotional rewards of having children are overshadowed by the stress associated with contemporary parenthood in countries that do not provide resources, especially subsidized childcare and paid time off, to adults raising the next generation.

These results underscore the theoretical importance of considering the policy context (or distal factors) for understanding the impact of social roles on well-being. Parenthood as a social role has changed tremendously from the agrarian societies of the past to the

competitive post-industrial economies of OECD nations. Concomitantly, the stressors associated with parenthood have intensified while the economic and social rewards of parenthood have declined. Without public policy intervention to alter this calculus and spread the costs of reproducing the labor force more widely, parents are left shouldering significant burdens of time and expense, and find their ability to reap emotional rewards from children and family life limited as a result. But most encouragingly, our results demonstrate that policies to improve parental happiness also improve general well-being, avoiding unpleasant trade-offs between those who are and are not raising children.

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Appendix 1. Summary of Country Observations Available for Multilevel Analysis (2006, 2008 ESS with Supplemental ISSP English-Speaking Countries: Australia, New Zealand, United States)

| Country | No. of Obs. |
|---------------|-------------|
| Australia | 2 |
| Belgium | 2 |
| Czech Repub. | 1 |
| Denmark | 2 |
| Finland | 2 |
| France | 2 |
| Germany | 2 |
| Greece | 1 |
| Hungary | 1 |
| Ireland | 2 |
| Israel | 1 |
| Netherlands | 2 |
| New Zealand | 2 |
| Norway | 2 |
| Poland | 2 |
| Portugal | 2 |
| Russia | 2 |
| Spain | 2 |
| Sweden | 2 |
| Switzerland | 2 |
| Great Britain | 2 |
| United States | 2 |
| Total | 40 |

Note. All multilevel models are estimated initially using this sample. Number of observations/groups per country in final models is determined by listwise availability of policy variables and demographic covariates and also by exclusion of influential policy observations.

Appendix 2. Descriptive Statistics by Country (2006 and 2008 ESS with ISSP Supplemental Countries)

| | Happiness Mean (SD) | Vacation/ Sick Leave (Avg. Wks) | Work Flexibility (%) | Paid Maternity/ Parental Leave (Wks) | Childcare Cost (% of wage) | Composite Policy Index (CPI) | Pmt into Social Insurance / Major Elig. Restrictions | GDP Per Capita, 2006 | TFR, 2009 |
|--------------|---------------------|---|----------------------|--|----------------------------------|---------------------------------|---|----------------------|-----------|
| Australia | 8.05 (1.58) | 2.5 | 41 | 0/0 | . | 0.67 | 0/0 | 36203 | 1.79 |
| Austria | 7.44 (1.98) | 10 | 52 | 16/0 | . | 1.71 | 0/0 | 39234 | 1.41 |
| Belgium | 7.66 (1.59) | 9.3 | 38 | 11/13 | . | 1.05 | 1/0 | 37903 | 1.77 |
| Czech Repub. | 6.85 (1.90) | 28 | 54 | 19/0 | 8.6 | 1.92 | 0/0 | 13887 | 1.28 |
| Denmark | 8.35 (1.37) | 29 | 51 | 16/6 | 8.4 | 2.02 | 0/0 | 50462 | 1.80 |
| Finland | 8.01 (1.43) | 24 | 62 | 12/26 | 7.6 | 2.05 | 1/0 | 39487 | 1.80 |
| France | 7.13 (1.78) | 24.5 | 48 | 16/0 | . | 1.92 | 1/1 | 35558 | 1.92 |
| Germany | 7.10 (1.95) | 29.7 | 51 | 14/104 | 9.1 | 1.76 | 0/0 | 35238 | 1.34 |
| Greece | 6.67 (1.93) | 38 | 29 | 9/0 | . | 1.39 | 1/0 | 23506 | 1.34 |
| Hungary | 6.09 (2.48) | 17.6 | 36 | 17/156 | 4.2 | 1.33 | 0/0 | 11174 | 1.32 |
| Ireland | 7.63 (1.83) | 6.9 | 55 | 13/0 | . | 1.41 | 1/0 | 52220 | 1.88 |
| Israel | 7.54 (2.02) | . | . | ./. | . | . | ./. | 20676 | 2.84 |
| Netherlands | 7.68 (1.40) | 20.2 | 43 | 16/0 | 17.5 | 1.51 | 1/0 | 41459 | 1.71 |
| New Zealand | 8.22 (1.50) | 2 | 63 | 0/0 | . | 1.07 | 0/0 | 26421 | 1.97 |
| Norway | 7.95 (1.53) | 28.1 | . | 42/104 | . | . | 1/1 | 72250 | 1.84 |
| Poland | 7.05 (2.10) | . | 55 | ./. | 6.8 | . | ./. | 8958 | 1.24 |
| Portugal | 6.43 (1.97) | 10.45 | 23 | 6/0 | . | 0.75 | 1/1 | 18996 | 1.41 |
| Russia | 5.97 (2.25) | 6.4 | . | 20/156 | . | . | 0/0 | 6947 | . |
| Spain | 7.63 (1.64) | 22.5 | 43 | 16/0 | 30.3 | 1.75 | 1/1 | 27989 | 1.35 |
| Sweden | 7.86 (1.57) | 16.9 | 64 | 42/0 | 4.5 | 2.67 | 1/1 | 43949 | 1.77 |
| Switzerland | 8.01 (1.50) | 5 | . | 16/0 | . | . | 1/0 | 52276 | 1.42 |
| U.K. | 7.43 (1.93) | 5.2 | 56 | 5/0 | 24.7 | 1.25 | 1/0 | 40335 | 1.79 |
| USA | 8.32 (1.60) | 0 | 10 | 0/0 | . | 0.15 | 0/1 | 44663 | 2.05 |

| | Parenthood | Female | Age M(SD) | Income Decile M(SD) | Married | Living with Partner | Working Full-Time | Postsecondary Education | White Collar |
|--------------|------------|--------|---------------|---------------------|---------|---------------------|-------------------|-------------------------|--------------|
| Australia | 0.30 | 0.55 | 50.74 (16.93) | 6.10 (3.03) | 0.61 | 0.11 | 0.44 | 0.68 | 0.55 |
| Austria | 0.36 | 0.54 | 44.52 (17.89) | 5.48 (1.98) | 0.46 | . | 0.69 | 0.40 | 0.36 |
| Belgium | 0.39 | 0.52 | 46.32 (18.68) | 6.73 (2.31) | 0.52 | 0.05 | 0.71 | 0.45 | 0.46 |
| Czech Repub. | 0.35 | 0.51 | 47.10 (17.34) | 3.43 (1.56) | 0.50 | 0.05 | 0.91 | 0.40 | 0.34 |
| Denmark | 0.35 | 0.51 | 49.51 (17.80) | 6.39 (2.51) | 0.57 | 0.12 | 0.71 | 0.56 | 0.48 |
| Finland | 0.31 | 0.51 | 48.33 (18.88) | 5.95 (2.46) | 0.50 | 0.15 | 0.80 | 0.47 | 0.40 |
| France | 0.37 | 0.54 | 48.42 (18.25) | 5.74 (2.51) | 0.48 | 0.12 | 0.45 | 0.47 | 0.46 |
| Germany | 0.33 | 0.49 | 48.61 (17.77) | 5.08 (2.33) | 0.54 | 0.09 | 0.70 | 0.56 | 0.41 |
| Greece | 0.41 | 0.55 | 45.04 (16.75) | 5.64 (2.36) | 0.58 | 0.03 | 0.87 | 0.31 | 0.28 |
| Hungary | 0.40 | 0.57 | 49.55 (18.94) | 5.23 (2.43) | 0.48 | 0.05 | 0.92 | 0.37 | 0.23 |
| Ireland | 0.41 | 0.54 | 46.96 (18.01) | 5.40 (2.60) | 0.50 | 0.07 | 0.64 | 0.59 | 0.38 |
| Israel | 0.50 | 0.54 | 45.42 (19.10) | 4.62 (2.66) | 0.61 | 0.03 | 0.64 | 0.43 | 0.43 |
| Netherlands | 0.33 | 0.54 | 49.16 (17.74) | 5.96 (2.44) | 0.47 | 0.07 | 0.57 | 0.53 | 0.52 |
| New Zealand | 0.32 | 0.55 | 50.93 (17.51) | 5.98 (2.97) | 0.64 | 0.16 | 0.45 | 0.56 | 0.66 |
| Norway | 0.37 | 0.49 | 45.83 (17.99) | 7.11 (2.38) | 0.49 | 0.15 | 0.70 | 0.57 | 0.44 |
| Poland | 0.49 | 0.53 | 44.38 (18.76) | 4.27 (2.84) | 0.56 | 0.03 | 0.85 | 0.37 | 0.31 |
| Portugal | 0.36 | 0.61 | 51.94 (19.58) | 3.95 (2.01) | 0.56 | 0.04 | 0.76 | 0.14 | 0.18 |
| Russia | 0.37 | 0.60 | 46.79 (19.02) | 3.16 (2.50) | 0.46 | 0.03 | 0.87 | 0.47 | 0.36 |
| Spain | 0.43 | 0.52 | 46.52 (19.05) | 4.93 (2.33) | 0.55 | 0.05 | 0.81 | 0.37 | 0.25 |
| Sweden | 0.35 | 0.50 | 47.40 (18.98) | 6.66 (2.24) | 0.45 | 0.20 | 0.76 | 0.47 | 0.44 |
| Switzerland | 0.28 | 0.55 | 49.32 (18.19) | 6.43 (2.54) | 0.50 | 0.07 | 0.68 | 0.43 | 0.48 |
| U.K. | 0.33 | 0.55 | 49.45 (18.82) | 5.76 (2.79) | 0.46 | 0.07 | 0.60 | 0.51 | 0.37 |
| USA | 0.34 | 0.57 | 48.74 (17.25) | 5.75 (2.93) | 0.49 | 0.06 | 0.51 | 0.57 | 0.46 |

Note. Happiness is aggregated from the ESS or ISSP data. CPI is a calculated as the sum of vacation/sick leave, work flexibility and paid leave for mothers after conversion of each element into standardized 0-1 format (theoretical range: 0-3).

Appendix 3. Fixed-Effects OLS Regression of Logged Reverse-Scored Happiness. Source: ESS (2006, 2008) with 2007, 2008 ISSP Countries (Australia, New Zealand and United States)

| COUNTRIES | (1) Combined Happiness | (2) 2006 ESS Happiness | (3) 2008 ESS Happiness |
|------------------|----------------------------------|----------------------------------|----------------------------------|
| New Zealand (1) | 0.0975 ^{***} (0.00379) | 0.102 ^{***} (0.00387) | 0.0966 ^{***} (0.00451) |
| Denmark (3) | -0.0195 ^{***} (0.00397) | -0.0303 ^{***} (0.00486) | -0.00161 (0.00470) |
| Australia (4) | -0.0705 ^{***} (0.00234) | -0.0689 ^{***} (0.00230) | -0.0716 ^{***} (0.00262) |
| Switzerland (5) | -0.114 ^{***} (0.00588) | -0.114 ^{***} (0.00817) | -0.0992 ^{***} (0.00764) |
| Finland (6) | -0.161 ^{***} (0.00597) | -0.164 ^{***} (0.00715) | -0.148 ^{***} (0.00742) |
| Ireland (7) | -0.181 ^{***} (0.00597) | -0.169 ^{***} (0.00775) | -0.180 ^{***} (0.00652) |
| Norway (8) | -0.183 ^{***} (0.00703) | -0.188 ^{***} (0.00910) | -0.161 ^{***} (0.00870) |
| Sweden (9) | -0.204 ^{***} (0.00604) | -0.179 ^{***} (0.00687) | -0.218 ^{***} (0.00872) |
| Spain (10) | -0.230 ^{***} (0.0104) | -0.177 ^{***} (0.0123) | -0.252 ^{***} (0.0123) |
| UK (11) | -0.234 ^{***} (0.00507) | -0.238 ^{***} (0.00603) | -0.222 ^{***} (0.00566) |
| Netherlands (12) | -0.254 ^{***} (0.00470) | -0.251 ^{***} (0.00526) | -0.251 ^{***} (0.00600) |
| Belgium (13) | -0.273 ^{***} (0.00649) | -0.250 ^{***} (0.00677) | -0.288 ^{***} (0.0107) |
| Israel (14) | -0.276 ^{***} (0.00696) | | -0.272 ^{***} (0.00815) |
| Poland (15) | -0.343 ^{***} (0.00854) | -0.289 ^{***} (0.0136) | -0.386 ^{***} (0.0102) |
| Germany (16) | -0.360 ^{***} (0.00480) | -0.406 ^{***} (0.00600) | -0.308 ^{***} (0.00493) |
| France (17) | -0.404 ^{***} (0.00393) | -0.402 ^{***} (0.00424) | -0.403 ^{***} (0.00474) |
| Czech Rep. (18) | -0.422 ^{***} (0.00878) | | -0.414 ^{***} (0.00845) |
| Greece (19) | -0.485 ^{***} (0.0116) | | -0.479 ^{***} (0.0146) |
| Portugal (20) | -0.545 ^{***} (0.00869) | -0.558 ^{***} (0.0120) | -0.526 ^{***} (0.00752) |
| Russia (21) | -0.609 ^{***} (0.00824) | -0.583 ^{***} (0.0148) | -0.631 ^{***} (0.00827) |
| Hungary (22) | -0.656 ^{***} (0.00795) | | -0.652 ^{***} (0.00885) |

Note. Bolded numbers in parentheses denote rank ordering of happiness (1 = happiest country; USA is 2 and is reference category). Models include sociodemographic controls (sex, age, income, married or living with partner, full-time work, education, occupation).

^{***}
 $p < .001$ (two-tailed)

Appendix 4. Multilevel Mixed-Effects Regressions of Logged Reverse-Scored Happiness with Parenthood Interactions Source: 2006 and 2008 European Social Survey with ISSP Supplemental English-Speaking Countries

| Level 2: Estimates for Country-Level Policy and Contextual Variables | |
|--|--------------------------------|
| Vacation/Sick | 0.00348 (0.00375) |
| Work Flex | 0.0130 ^{**} (0.00582) |
| Paid Matern | 0.0278 (0.0265) |

| Level 2: Estimates for Country-Level Policy and Contextual Variables | | | | | | | | | |
|---|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|---------------------|--------------------|--|
| Paid Parent | | | | 0.0327 (0.0401) | | | | | |
| Childcare Cost | | | | | -0.00502 (**) | | | | |
| Comp Policy (CPI) | | | | | | 0.121 (***) | | | |
| Pub Soc. Ins. | | | | | | | -0.264 (***) | | |
| Major Res. | | | | | | | | -0.0724 (*) | |
| GDP | -0.0131 (0.0319) | 0.0891 (**) | -7.13e-05 (0.0380) | 0.00253 (0.0398) | 0.0248 (0.0340) | 0.00191 (0.0363) | 0.0992 (***) | 0.0876 (**) | |
| TFR | 0.234 (***) | 0.0653 (0.0410) | 0.164 (***) | 0.204 (***) | 0.126 (***) | 0.236 (***) | 0.00397 (0.0302) | 0.180 (***) | |
| Level 1: Estimates for Individual-Level Variables (Includes Parenthood × Policy Cross-Level Interactions) | | | | | | | | | |
| Parenthood | -0.0603 (***) | 0.0334 (0.0288) | -0.0482 (**) | -0.0230 (**) | 0.0231 (0.0165) | -0.0300 (**) | -0.0413 (**) | -0.0261 (***) | |
| Parenthood × Policy | 0.00329 (**) | -0.00422 (**) | 0.0134 (+) | 0.0190 (**) | -0.00379 (**) | 0.0402 (**) | 0.0365 (**) | 0.0455 (**) | |
| Female | 0.0615 (***) | 0.0578 (***) | 0.0623 (***) | 0.0625 (***) | 0.0662 (***) | 0.0627 (***) | 0.0624 (***) | 0.0657 (***) | |
| Age | -0.00680 (***) | -0.00133 (***) | -0.000423 (***) | -0.00022 (***) | -0.00131 (***) | -0.00071 (***) | -0.000528 (***) | -0.000330 (***) | |
| Age Squared | 0.000182 (***) | 0.000196 (***) | 0.000177 (***) | 0.000185 (***) | 0.000219 (***) | 0.000184 (***) | 0.000187 (***) | 0.000183 (***) | |
| Family Income | 0.0230 (***) | 0.0229 (***) | 0.0219 (***) | 0.0230 (***) | 0.0269 (***) | 0.0225 (***) | 0.0208 (***) | 0.0229 (***) | |
| Married | 0.210 (***) | 0.211 (***) | 0.208 (***) | 0.210 (***) | 0.217 (***) | 0.210 (***) | 0.207 (***) | 0.208 (***) | |
| Lives w/Partner | 0.131 (***) | 0.128 (***) | 0.125 (***) | 0.134 (***) | 0.140 (***) | 0.131 (***) | 0.128 (***) | 0.133 (***) | |
| Full Time Work | -0.0186 (***) | -0.0158 (***) | -0.0198 (***) | -0.0185 (***) | -0.0261 (***) | -0.0180 (***) | -0.0165 (***) | -0.0175 (***) | |
| Some Post-Secondary Educ | 0.000149 (0.00685) | -0.00284 (0.00667) | 0.00396 (0.00697) | 0.00196 (0.00676) | 0.00505 (0.00855) | -0.00143 (0.00713) | -8.97e-06 (0.00679) | 0.00247 (0.00677) | |
| Higher Degree | -0.0126 (0.00796) | -0.00929 (0.00781) | -0.00814 (0.00803) | -0.00699 (0.00789) | -0.0149 (0.00987) | -0.00911 (0.00830) | -0.0149 (**) | -0.00555 (0.00790) | |
| Mgr / Prof. | 0.0344 (***) | 0.0381 (***) | 0.0360 (***) | 0.0340 (***) | 0.0384 (***) | 0.0408 (***) | 0.0288 (***) | 0.0352 (***) | |
| Other Prof. | 0.0209 (***) | 0.0203 (***) | 0.0213 (***) | 0.0196 (***) | 0.0219 (***) | 0.0260 (***) | 0.0112 (0.00763) | 0.0231 (***) | |
| Constant | 0.925 (***) | 0.792 (***) | 0.849 (***) | 0.828 (***) | 0.992 (***) | 0.931 (***) | 1.188 (***) | 0.977 (***) | |
| Observations | 40,036 | 41,230 | 38,796 | 39,914 | 22,986 | 36,937 | 40,814 | 40,284 | |
| Number of groups | 30 | 31 | 29 | 29 | 15 | 28 | 31 | 30 | |
| Log Likelihood | -31126 | -31438 | -30158 | -30610 | -16567 | -28734 | -31412 | -31126 | |

Note. All models include a random coefficient for parenthood (has child). Number of groups differs across models due to listwise availability of policy variables and exclusion of influential groups from policy estimates. Comprehensive policy model includes only countries with full policy information for vacation/sick leave, work flexibility, and paid leave for mothers.

For policy estimates and cross-level interactions (one-tailed):

- *** $p < .001$,
- ** $p < .01$,
- * $p < .05$,
- + $p < .06$

For all other coefficients (two-tailed): *** $p < .001$, ** $p < .01$, * $p < .05$

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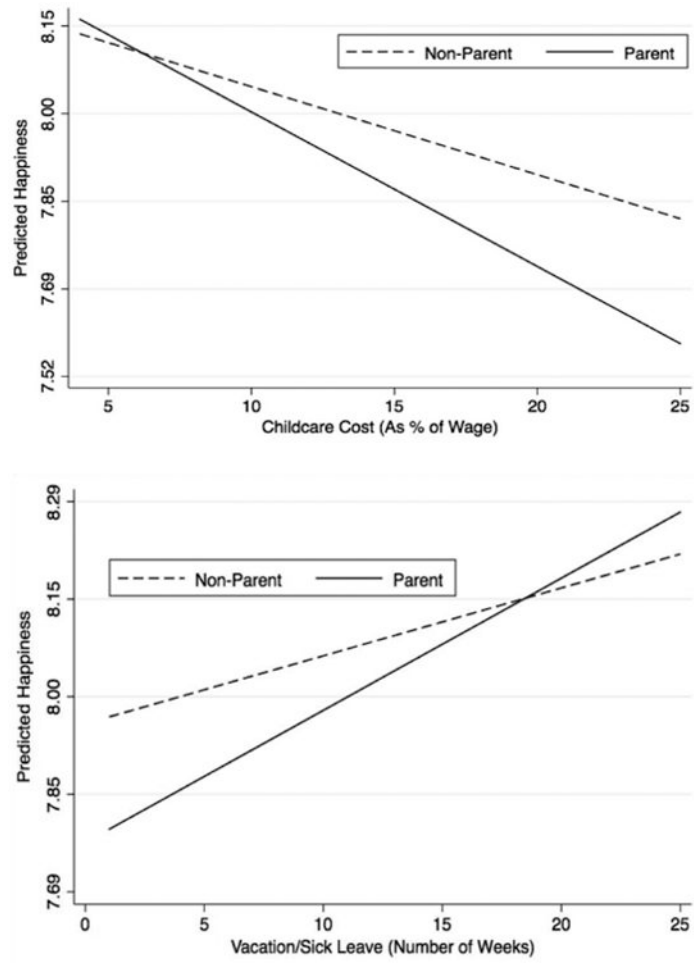


Figure 1. Estimated Happiness (1-10 scale) for Parents and Non-Parents with Selected Policies^a
Source: ESS and ISSP, 2004-2007

^aAll control variables at the individual and country level are held at their sample mean

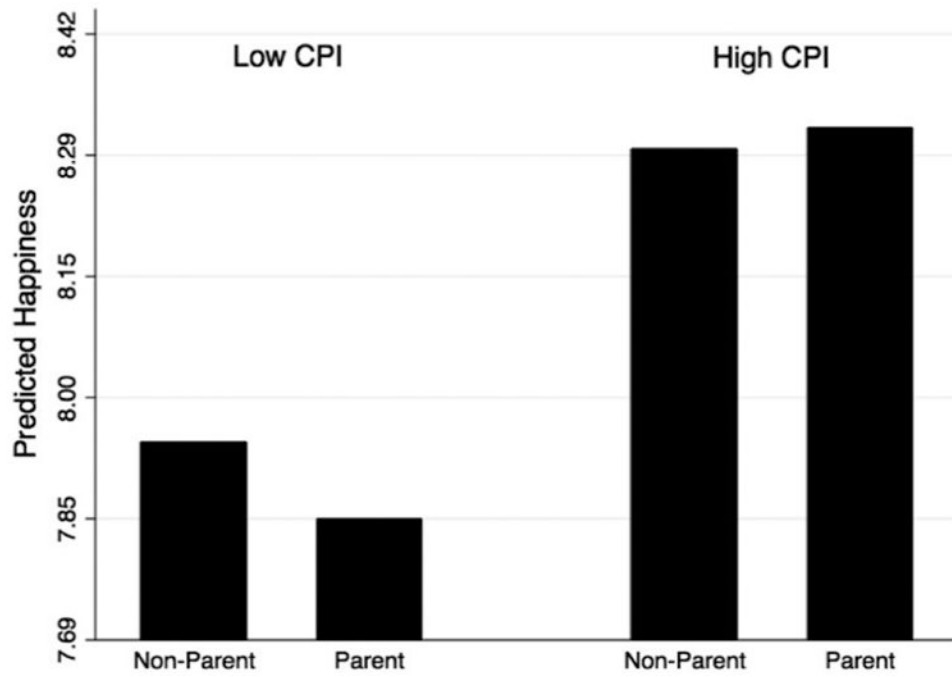


Figure 2. Estimated Happiness (1-10 scale) for Parents and Non-Parents with Comprehensive Policy Index, Source: ESS and ISSP, 2004-2007^a

^aAll control variables at the individual and country level are held at their sample mean

Table 1
Overall Descriptive Statistics (2006 and 2008 ESS with Supplemental ISSP English-Speaking Countries)

| Variable | M | SD | N | Min | Max |
|---|----------|----------|-------|------|--------|
| Happiness | 7.41 | 1.92 | 78972 | 0 | 10 |
| Log(Reverse+1) | 1.27 | 0.58 | 78972 | 0 | 2.4 |
| A. Country-Level Policy and Contextual Variables | | | | | |
| Vacat./Sick Leave | 16.01 | 11.16 | 21 | 0 | 38 |
| Work Flexibility | 46.00 | 14.15 | 19 | 10 | 64 |
| Paid Leave for Mothers | 14.54 | 10.97 | 21 | 0 | 42 |
| Paid Parental Leave | 26.90 | 52.91 | 21 | 0 | 156 |
| Childcare Cost | 12.63 | 8.3 | 10 | 4.2 | 30.3 |
| Comp. Policy Index (CPI) | 1.45 | 0.61 | 17 | 0.15 | 2.67 |
| Pnt into Social Insurance | 0.57 | | 21 | 0 | 1 |
| Major Eligibility Restrictions | 0.29 | | 21 | 0 | 1 |
| GDP 2006 | 33810.58 | 16406.98 | 23 | 6947 | 72250 |
| TFR 2009 | 1.66 | 0.35 | 22 | 1.24 | 2.84 |
| Average Work Hours | 1693.73 | 174.60 | 22 | 1393 | 2095 |
| % Women in Labor Force | 61.07 | 8.01 | 22 | 45.3 | 72 |
| Family Allowance (1999-2001) | 172.93 | 87.09 | 20 | 0 | 345.91 |
| B. Individual-Level Variables | | | | | |
| Has Child | 0.36 | | 79057 | 0 | 1 |
| Female | 0.54 | | 79399 | 0 | 1 |
| Age | 48.15 | 18.44 | 79071 | 16 | 70 |
| Fam Income (Decile) | 5.53 | 2.73 | 62888 | 1 | 10 |
| Married | 0.52 | | 79009 | 0 | 1 |
| Lives With Partner | 0.08 | | 78744 | 0 | 1 |
| Works Full-Time | 0.68 | | 67243 | 0 | 1 |
| Post-secondary educ | 0.25 | | 78837 | 0 | 1 |
| College Degree | 0.22 | | 78837 | 0 | 1 |
| White Collar | 0.40 | | 72608 | 0 | 1 |

Note. Vacat./sick leave refers to average weeks of vacation and sick leave within each country. Work flexibility is calculated as proportion of companies (establishment)s within country providing flexi-time (possibility to vary start/end of work and/or accumulate hours for short or long periods of leave). Paid leave for mothers refers to base paid parental leave in weeks, plus any maternity-specific leave

component. Major elig. restrict. denotes the presence of major eligibility restrictions for leave policies. Childcare cost is given as percentage of average wage. CPI is based on summation of vacation/sick leave, work flexibility and paid leave for mothers after conversion of each element into percentile score relative to highest-scoring country (theoretical range: 0-3).

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Table 2
Transformations and Final Descriptive Statistics of Policy Variables for Multilevel Analyses

| Policy Variable | Original Units | Transformation | Final Descriptive Statistics | | | |
|----------------------------|------------------|--------------------|------------------------------|------|-----|------|
| | | | M | SD | Min | Max |
| Comprehensive Policy Index | Continuous (0-3) | '0' Low / '1' High | 0.43 | 0.50 | 0 | 1 |
| Vacation/Sick Leave | Weeks | Stdized, RO | 13.34 | 7.16 | 1 | 25 |
| Work Flexibility | Weeks | Stdized, RO | 12.56 | 3.98 | 4 | 19 |
| Paid Leave for Mothers | Weeks | Stdized, Cat | 2.05 | 1.09 | 1 | 4 |
| Paid Parental Leave | Weeks | Cat | 0.54 | 0.76 | 0 | 2 |
| Pmt into Social Ins | '0' No / '1' Yes | - | 0.75 | 0.43 | 0 | 1 |
| Major Elig. Restrictions | Cat (0/1/2/3) | '0' No / '1' Yes | 0.25 | 0.43 | 0 | 1 |
| Childcare cost (% of wage) | Percentage | - | 11.39 | 6.75 | 4.5 | 24.7 |

Note. "Stdized" denotes z-score standardization, "RO" denotes rank-ordering of policy by country, "Cat" denotes conversion into a categorical variable. Final descriptive statistics are based on countries included in the final estimation samples for their respective multilevel models (multilevel sample with influential policy observations removed).

Table 3

Parenthood Effects from Fixed-Effects Regression. Source: ESS (2006, 2008) with 2007, 2008 ISSP Countries (Australia, New Zealand and United States)

| COUNTRY | (1) Combined Happiness | (2) 2006 -07 Happiness | (3) 2008 Happiness |
|------------------|------------------------|------------------------|--------------------|
| Portugal (1) | 0.077 *** | 0.061 *** | 0.101 *** |
| Hungary (2) | 0.046 *** | | 0.049 *** |
| Spain (3) | 0.031 *** | 0.027 *** | 0.065 *** |
| Norway (4) | 0.02 *** | 0.022 *** | 0.019 *** |
| Sweden (5) | 0.019 *** | 0.038 *** | 0.005 *** |
| Finland (6) | 0.015 *** | 0.015 *** | 0.015 *** |
| France (7) | 0.011 *** | 0.032 *** | 0.007 *** |
| Russia (8) | 0.007 *** | -0.022 *** | 0.031 *** |
| Belgium (9) | -0.001 *** | -0.002 *** | -0.001 *** |
| Germany (10) | -0.006 *** | 0.024 *** | -0.034 *** |
| Czech. Rep. (11) | -0.009 *** | | -0.005 *** |
| Israel (12) | -0.012 *** | | -0.01 *** |
| Netherlands (13) | -0.022 *** | -0.025 *** | -0.02 *** |
| Denmark (14) | -0.028 *** | -0.041 *** | -0.006 *** |
| Australia (15) | -0.041 *** | -0.035 *** | -0.038 *** |
| Poland (16) | -0.05 *** | -0.130 | -0.022 *** |
| Switzerland (17) | -0.07 *** | -0.049 *** | -0.094 *** |
| New Zealand (18) | -0.082 *** | -0.077 *** | -0.076 *** |
| UK (19) | -0.083 *** | -0.057 *** | -0.105 *** |
| Greece (20) | -0.087 *** | | -0.086 ** |
| Ireland (21) | -0.10 *** | -0.083 *** | -0.116 |
| USA (22) | -0.127 | -0.121 | -0.123 |

Note. Bolded numbers in parentheses denote rank ordering of parents (1 = happiest parents; USA is ranked last and served as reference category for estimation of fixed effects). Models include sociodemographic controls (sex, age, income, married or living with partner, full-time work, education, occupation).

**
 $p < .01$,

 $p < .001$ (two-tailed) for comparisons to the U.S. effect

Table 4

Results from Multilevel Mixed-Effects Regressions of Happiness on Parenthood and Work-Family Reconciliation Policies (Source: 2006 and 2008 European Social Survey with ISSP Supplemental English-Speaking Countries.*

| | Model 1. MAIN EFFECTS: COUNTRY-LEVEL POLICY AND PARENTHOOD | | | | | | | | | |
|-------------------------|---|--------------------------------------|-------------------------------------|---------------------------|-------------------------------------|----------------------------|---------------------------|-------------------------------------|--|--|
| | Vacation/Sick Leave | Work Flexibility | Paid Leave for Mothers | Paid Parental Leave | Childcare Cost | Comp Policy Index (CPI) | Pmt into Soc. Ins. | Major Elig. Res. | | |
| (1) Policy Effect | 0.00397 (0.00377) | 0.0124** (0.00500) | 0.0294 (0.0266) | 0.0355 (0.0402) | -0.00556** (0.00246) | 0.127*** (0.0404) | -0.260*** (0.0393) | -0.0655⁺ (0.0414) | | |
| (2) Parenthood Effect | -0.0163 (0.0099) | -0.0185⁺ (0.01002) | -0.0206* (0.0102) | -0.0131 (0.00892) | -0.0194⁺ (0.0114) | -0.0140 (0.00958) | -0.0138 (0.00977) | -0.0142 (0.00913) | | |
| | Model 2. CROSS-LEVEL INTERACTION RESULTS: POLICY AND PARENTHOOD | | | | | | | | | |
| (3) Policy Effect | 0.00348 (0.00375) | 0.0130** (0.00502) | 0.0278 (0.0265) | 0.0327 (0.0401) | -0.00502** (0.00236) | 0.121*** (0.0400) | -0.264*** (0.0394) | -0.0724* (0.0414) | | |
| (4) Parenthood Effect | -0.0603*** (0.0179) | 0.0334 (0.0288) | -0.0482** (0.0199) | -0.0230** (0.0101) | 0.0231 (0.0165) | -0.0308*** (0.0110) | -0.0413** (0.0184) | -0.0261** (0.00969) | | |
| (5) Parenthood × Policy | 0.00329** (0.00116) | -0.00422* (0.00221) | 0.0134⁺ (0.00841) | 0.0190* (0.0106) | -0.00379*** (0.00123) | 0.0402** (0.0163) | 0.0365* (0.0209) | 0.0455** (0.0179) | | |
| Observations | 40,036 | 41,230 | 38,796 | 39,914 | 22,986 | 36,937 | 40,814 | 40,284 | | |
| Number of groups | 30 | 31 | 29 | 29 | 15 | 28 | 31 | 30 | | |
| Log Likelihood | -31126 | -31438 | -30158 | -30610 | -16567 | -28734 | -31412 | -31126 | | |

* Models include sociodemographic controls (sex, age, income, married or living with partner, full-time work, education, occupation) at level 1 and GDP and TFR at level 2 (country).

*** $p < .001$,

** $p < .01$,

* $p < .05$,

⁺ $p < .06$ (one-tailed)

Table 5
Results By Gender from Multilevel Mixed-Effects Regressions of Happiness on Work-Family Reconciliation Policies

| Policy Model | Total Sample | Men | Women | Parents | Mothers | Fathers |
|--------------------------|--------------|------------|------------|------------|------------|------------|
| Vac./Sick Leave | 0.0036 | 0.0019 | 0.0046 | 0.0042 | 0.0065* | 0.0027 |
| x parent | 0.0033*** | 0.0042*** | 0.0028** | | | |
| x employed | | | | 0.0011 | -0.0001 | 0.0005 |
| N | 40036 | 19581 | 20455 | 15126 | 8369 | 6757 |
| Work Flex | 0.0103** | 0.0086** | 0.0112** | 0.0071 | 0.0071 | 0.0022 |
| x parent | -0.0042** | -0.0027 | -0.0049** | | | |
| x employed | | | | -0.0008 | -0.0021 | 0.0058 |
| N | 41230 | 20097 | 21133 | 16017 | 8873 | 7144 |
| Leave for Mothers | 0.0332 | 0.0305 | 0.0332 | 0.0465** | 0.0497** | 0.0348 |
| x parent | 0.0135* | 0.0194** | 0.0095 | | | |
| x employed | | | | 0.0037 | 0.0019 | 0.0104 |
| N | 38796 | 18956 | 19840 | 14446 | 8006 | 6440 |
| Parental Leave | 0.0582** | 0.0485* | 0.0651** | 0.0663** | 0.0817*** | 0.0456 |
| x parent | 0.0191** | 0.0270*** | 0.0111 | | | |
| x employed | | | | 0.0059 | -0.0081 | 0.0182 |
| N | 39914 | 19465 | 20449 | 14831 | 8214 | 6617 |
| Childcare Cost | -0.0050** | -0.0036 | -0.0064*** | -0.0099*** | -0.0115*** | -0.0068** |
| x parent | -0.0038*** | -0.0031** | -0.0041*** | | | |
| x employed | | | | 0.0012 | -0.0002 | 0.0011 |
| N | 22986 | 11339 | 11647 | 8589 | 4709 | 3880 |
| CPI | 0.1449*** | 0.1255*** | 0.1552*** | 0.1596*** | 0.1786*** | 0.1380*** |
| x parent | 0.0402*** | 0.0616*** | 0.024 | | | |
| x employed | | | | 0.0189 | -0.0023 | 0.0301 |
| N | 36937 | 18033 | 18904 | 13816 | 7678 | 6138 |
| Social Ins. Pmt. | -0.2380*** | -0.2439*** | -0.2307*** | -0.2296*** | -0.1982*** | -0.2619*** |
| x parent | 0.0366** | 0.0639*** | 0.0167 | | | |

| Policy Model | Total Sample | Men | Women | Parents | Mothers | Fathers |
|------------------------|--------------|------------|------------|------------|---------|---------|
| x employed | | | | 0.0221 | -0.0423 | 0.0682* |
| N | 40814 | 19824 | 20990 | 15401 | 8545 | 6856 |
| Elig. Restrict. | -0.1065*** | -0.0897*** | -0.1191*** | -0.0375*** | -0.0411 | -0.0451 |
| x parent | 0.0453*** | 0.0297 | 0.0570*** | | | |
| x employed | | | | -0.0101 | -0.0142 | -0.0044 |
| N | 40284 | 19666 | 20618 | 14766 | 8195 | 6571 |

* $p < .06$
 ** $p < .05$
 *** $p < .01$ (one-tailed)